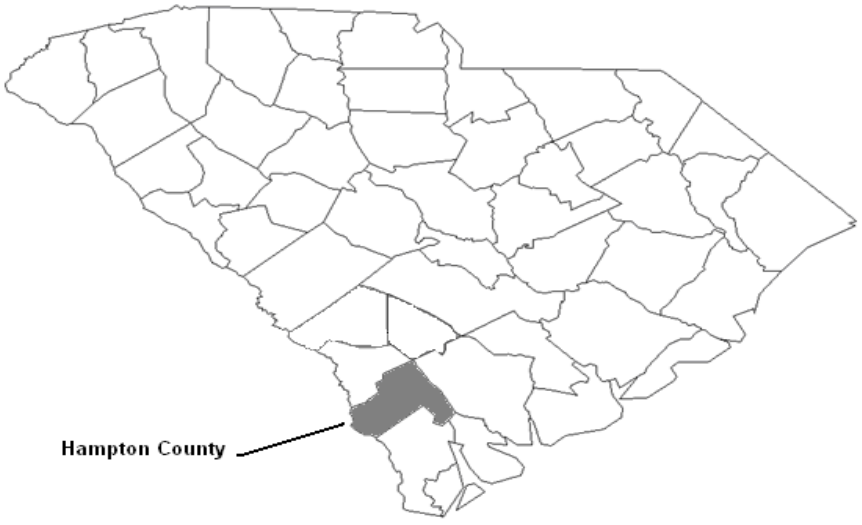
FLOOD INSURANCE STUDY

HAMPTON COUNTY, SOUTH CAROLINA,
AND INCORPORATED AREAS

Community Name	Community Number
BRUNSON, TOWN OF	450096
ESTILL, TOWN OF	450097
FURMAN, TOWN OF	450098
GIFFORD, TOWN OF	450099
HAMPTON, TOWN OF	450100
HAMPTON COUNTY (UNINCORPORATED AREAS)	450095
LURAY, TOWN OF	450242
SCOTIA, TOWN OF	450101
VARNVILLE, TOWN OF	450102



EFFECTIVE DATE: SEPTEMBER 29, 2010

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
45049CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components. A listing of the Community Map Repositories can be found on the Index Map.

Initial Countywide FIS Effective Date: September 29, 2010

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FLOOD INSURANCE STUDY
HAMPTON COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Hampton County, including, the Towns of Brunson, Estill, Furman, Gifford, Hampton, Luray, Scotia, and Varnville, and the unincorporated areas of Hampton County, SC (referred to collectively herein as Hampton County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the Town of Yemassee is located both in Hampton, and Beaufort Counties. The Town of Yemassee is shown entirely in the Beaufort County FIS.

In some States or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence, and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS report are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This FIS was prepared to include all jurisdictions within Hampton County into a countywide format FIS. The authority and acknowledgements for each jurisdiction with a previously printed FIS report included in this countywide FIS are shown below:

Hampton County
(Unincorporated Areas): The hydrologic and hydraulic analyses for this study were prepared by the U.S. Geological Survey (USGS) for the Federal Emergency Management Agency (FEMA), under Contract No. EMW-85-E-1823, Project Order No. 10. This work was completed in

June 1986.

Hampton, Town of: The hydrologic and hydraulic analyses for the May 17, 1988 FIS were performed by the USGS for FEMA, under Contract No. EMW-85-E-1825, Project Order No. 10. This study was completed in June 1986.

The authority and acknowledgments for the Towns of Brunson, Estill, Furman, Gifford, Luray, Scotia, and Varnville are not included because there were no previously printed FIS reports for these communities.

For this countywide FIS, existing detailed floodplains were redelineated and additional approximate hydrologic and hydraulic analyses were prepared by URS Corporation (URS) for the State of South Carolina Department of Natural Resources (SCDNR) under South Carolina Map Modernization Initiative Project No. 08-04-2414S. This study was completed in January 2009.

Base map information shown on the Flood Insurance Rate Map (FIRM) was provided in digital format by Hampton County, SC (2009). This information was developed at scales of 1"=2000', 1"=1000' and1"=500'. Users of this FIRM should be aware that minor adjustments may have been made to specific base map features.

The coordinate system used for the production of this FIRM is Universal Transverse Mercator (UTM Zone 17), North American Datum of 1983 (NAD 83). Corner coordinates shown on the FIRM are in latitude and longitude referenced to the UTM Projection, NAD 83. Differences in the datum and spheroid used in the production of FIRMs for adjacent counties may result in slight positional differences in map features at the county boundaries. These differences do not affect the accuracy of information shown on the FIRM.

1.3 Coordination

An initial Consultation Coordination Officer's (CCO) meeting is typically held with representatives of FEMA, the community, and the study contractor to explain the nature and purpose of an FIS and to identify the streams to be studied by detailed methods. A final CCO meeting is typically held with the same representatives to review the results of the study.

The dates of the pre-countywide initial and final CCO meetings held for the communities within Hampton County are shown in Table 1, "Pre-Countywide Initial and Final CCO Dates."

TABLE 1 – PRE-COUNTYWIDE INITIAL AND FINAL CCO DATES

Community Name	Initial CCO Date	Final CCO Date

Hampton, Town of	January 29, 1985	March 5, 1987
Hampton County (Unincorporated Areas)	January 1985	March 5, 1987

For this countywide FIS an initial CCO meeting was held on June 26, 2008. This meeting was attended by representatives of Hampton County, the Towns of Brunson, Gifford, Hampton, and Yemassee, the Lower Savannah Council of Governments, URS, and SCDNR.

The results of the study were reviewed at the final CCO meeting held on November 3, 2009. This meeting was attended by representatives of Hampton County, Town of Hampton, URS and SCDNR. All problems raised at that meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS report covers the geographic area of Hampton County, SC.

Portions of Coosawhatchie River Tributary, Horse Creek and Sanders Branch have been previously studied by detailed methods. Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2).

The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through Hampton County.

Floodplain boundaries of streams that have been previously studied by detailed methods were re-delineated based on more up-to-date topographic mapping.

All other flooding sources in Hampton County have been studied by approximate analyses. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon, by FEMA and Hampton County.

2.2 Community Description

Hampton County which has an area of 563 square miles is located in the southeastern part of South Carolina. It is bordered on the northwest by Allendale County, SC, to the west by Screven County, GA, to the southwest by Effingham County, GA, the north by Bamberg County, SC, to the south by Jasper County, SC, to the southeast by Beaufort County, SC and to the east by Colleton County, SC. There are nine incorporated communities within Hampton County; they are the Towns of Brunson,

Estill, Furman, Gifford, Hampton, Luray, Scotia, Varnville, and Yemassee.

The total population of Hampton County was 21,210 in 2007 according to the U.S. Department of Commerce, Bureau of the Census (Reference 1).

2.3 Principal Flood Problems

The principal flooding sources within Hampton County include, Black Creek, Boggy Branch, Brier Creek, Caw Caw Swamp, Cedar Branch, Combahee River, Coosawhatchie River, Filly Branch, House Fork, Jackson Branch, Long Branch, Salkehatchie River, Sanders Branch, Savannah River, Tulifinny River, Whippy Swamp and their associated tributaries.

For the 1-percent-annual-chance flood, the bridge over the Tributary to Coosawhatchie River at State Road 68 will cause approximately 2.3 feet of backwater and the earthen dam immediately upstream will cause approximately 7.5 feet of backwater. The embankment of State Road 68 will not be overtopped, but the dam will be overtopped by approximately 2.0 feet.

State Highway 363 will cause approximately 2.5 feet of backwater on the Tributary to Coosawhatchie River and will be overtopped by approximately 0.6 feet by the 1-percent-annual-chance flood. Backwater from the 1-percent-annual-chance flood on the Coosawhatchie River will not affect the Tributary to Coosawhatchie River upstream of State Road 68.

The access roads on House Fork will be overtopped by approximately 4.0 feet of water and will not cause backwater for the 1-percent-annual-chance flood.

The State Road 593 (Pocotaligo Road) bridge over Sanders Branch will cause approximately 0.6 foot of backwater for the 1-percent-annual-chance flood and will not be overtopped. The State Road 50 bridge over Sanders Branch will cause approximately 1.0 foot of backwater for the 1-percent-annual-chance flood. The embankment will not be overtopped. Backwater from the 1-percent-annual-chance flood on the Coosawhatchie River will have no effect on Sanders Branch upstream from State Road 593.

Coosawhatchie River experienced a record peak discharge of 8,160 cubic feet per second (cfs) on September 2, 1969, at USGS gaging station No. 02176500 on U.S. Highway 601 approximately 2.5 miles southwest of the Town of Hampton. This discharge was greater than the 1-percent-annual-chance discharge computed for the station by Whetstone (Reference 2).

2.4 Flood Protection Measures

At the time of the effective study, the only flood protection measure within the

corporate limits of the Town of Hampton is a channelized portion of the Coosawhatchie River Tributary in the vicinity of Lightsey Street in southwestern Hampton.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that is expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance flood in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

Information on the methods used to determine peak discharge-frequency relationships for the streams studied by detailed methods is shown below.

Pre-Countywide Analyses

Discharges for the streams studied by detailed methods were computed using equations developed for rural streams by Whetstone (Reference 2). Drainage areas were determined from USGS topographic maps at a scale of 1:62, 500 with a contour interval of 20 feet (Reference 3). Rural discharges were not adjusted for urbanization effects because the drainage basins were marginally urbanized.

Outflow from the dam on the Coosawhatchie River Tributary upstream from State Route 68 was not adjusted for storage because the water would be only 2 feet deep over the dam during 1-percent-annual-chance flood, and because the study area ended just below the dam.

This Countywide Analysis

No new detailed hydrologic analyses were carried out for this countywide study.

Peak discharge-drainage area relationships for the selected recurrence intervals are shown in Table 2, "Summary of Discharges."

TABLE 2 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
COOSAWHATCHIE RIVER TRIBUTARY					
At State Road 68	2.84	*	*	675	*
Approximately 600 feet downstream of upstream corporate limits	1.22	*	*	431	*
At Crooked Street	0.34	*	*	236	*
HOUSE FORK					
At confluence with Sanders Creek	4.23	*	*	833	*
Approximately 4, 150 feet upstream of confluence with Sanders Creek	4.04	*	*	813	*
SANDERS BRANCH					
At State Road 593	19.02	*	*	1,848	*
At State Road 50	14.16	*	*	1,581	*
At downstream corporate limits	11.98	*	*	1,447	*

* Data Not Available

For the approximate analyses, the USGS revised regional regression equations for the Upper Coastal Plain and Lower Coastal Plain regions were used (Reference 4 and Reference 5). For Savannah River, flows at different flow change locations were updated based on USGS Gage information

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimate the flood elevations of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the FIRM.

Cross sections for the flooding sources studied by detailed methods were obtained from field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Pre-Countywide Analyses

Water–surface elevations for Coosawhatchie River Tributary, House Fork and Sanders Branch were determined using the USGS WSPRO (water-surface profile) step-backwater program (Reference 6). Water surface elevations upstream from culverts were computed using USGS program A526 (Reference 7). Flow over highway embankments at culverts were computed using the USGS step-backwater program E431 (Reference 8).

Starting water surface elevations for the Coosawhatchie River Tributary were determined by the slope conveyance method at a cross section 0.4 mile downstream from State Road 68. Slope conveyance computation indicated that the 1-percent-annual-chance flood of the Coosawhatchie River at its junction with the Coosawhatchie River Tributary would not affect flood elevations at State Road 68. Starting water surface elevations for House Fork and Sanders Branch were determined by the slope conveyance method at a point approximately 0.4 mile downstream of Pocotaligo Road. The 1-percent-annual-chance flood and peak discharges from these two streams would probably not reach their confluence simultaneously because the drainage area of Sanders Branch is significantly larger than the drainage area of House Fork. Profiles without backwater effects from either stream were computed separately using discharges from each stream. However, elevations downstream of their confluence with each other were computed using discharges obtained by combining their drainage areas and by using regression

equations by Whetsone rather than by adding the two tributary discharges (Reference 2).

Flow over the dam upstream of State Road 68 was computed using USGS program E431 (Reference 8). The 1-percent-annual-chance water surface elevation was 1.5 feet higher than the pipe drop outlet, so flow for the outlet was computed as pipe flow rather than weir flow.

Flow depths of the 1-percent-annual-chance flood for the Coosawhatchie River Tributary were shallower than depths for Sanders Branch and House Fork because it had relatively larger cross sectional areas, steeper channel slopes, and lower discharges.

The culvert and almost non existent embankment of the private road on House Fork at station 7655 would be totally submerged by the 1-percent-annual-chance flood, and the road crossing was treated as a modified step backwater cross section rather than as a culvert embankment section.

Roughness coefficients (Manning's "n") used in the hydraulic computations were chosen by engineering judgment based on field observation. Roughness values ranged from 0.035 to 0.075 for the channels, and from 0.035 to 0.2 for the overbank areas.

This Countywide Analysis

No new detailed hydraulic analyses were carried out for this countywide study. Approximate models were developed using the Watershed Information System (WISE) computer program developed by Watershed Concepts using the Automated Models and Mapping process (Reference 9).

3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are now prepared using NAVD 88 as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88, visit the National Geodetic Survey (NGS) Website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their Website at www.ngs.noaa.gov.

For Hampton County, SC, the datum conversion between NGVD29 and NAVD88 is -0.897 foot, which was calculated based on the method outlined in FEMA's Guidelines and Specifications for Flood Hazard Mapping Partners Appendix B, Table 3.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS report provides 1-percent-annual-chance floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations; delineations of the 1- and 0.2-percent-annual-chance floodplains; and a 1-percent-annual-chance floodway. This information is presented on the FIRM and in many components of the FIS report, including the Flood Profiles. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. For each stream studied by detailed methods, the 1- percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section.

For this countywide FIS, flood boundaries between cross sections were interpolated using a digital terrain model developed from the 30 meter Digital Elevation Models

(DEMs) from the National Elevation dataset (NED) (Reference 10) and 5 and 10 foot contour data. (Reference 11).

The 1- percent-annual-chance floodplain boundaries are shown on the FIRM. On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE). Small areas within the floodplain boundaries may lie above the flood elevations, but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM (Exhibit 2).

4.2 Floodways

Encroachment on floodplains by such elements as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

No floodways have been computed for this countywide study. Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplains will not cause more than a 1.0-foot increase in the Base Flood Elevation (BFE) at any point within the community.

The area between the floodway and 1-percent annual chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent annual chance flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1, "Floodway Schematic."

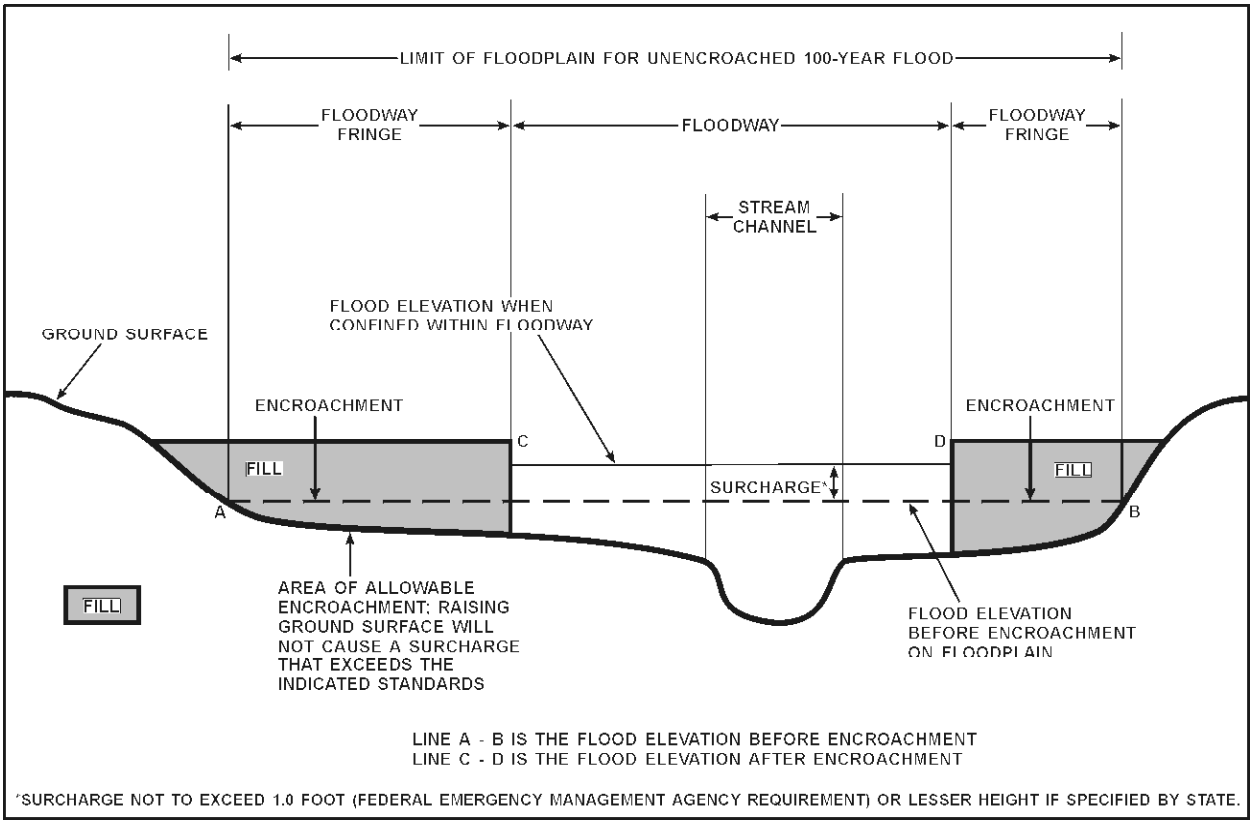


Figure 1: FLOODWAY SCHEMATIC

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no BFEs (1-percent-annual-chance) or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by detailed methods. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the

0.2-percent-annual-chance floodplain, areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile (sq. mi.), and areas protected from the base flood by levees. No BFEs or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0, and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot BFEs. Insurance agents use zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplains, and the locations of selected cross sections used in the hydraulic analyses.

The current countywide FIRM presents flooding information for the entire geographic area of Hampton County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. Historical data relating to the maps prepared for each community are presented in Table 3, "Community Map History."

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Hampton County has been compiled into this FIS. Therefore, this FIS supersedes all previously printed FIS reports, FIRMs, and/or Flood Hazard Boundary Maps for all of the incorporated and unincorporated jurisdictions within Hampton County.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting Federal Insurance and Mitigation Division, FEMA Region IV, Koger-Center — Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, GA 30341.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Brunson, Town of	May 31, 1974	November 14, 1975	August 5, 1986	
Estill, Town of	May 31, 1974	August 22, 1975	July 17, 1986	
Furman, Town of	June 14, 1974	July 9, 1976	June 3, 1986	
Gifford, Town of	March 26, 1976	None	July 3, 1986	
Hampton, Town of	May 24, 1974	October 31, 1975	May 17, 1988	
Hampton County (Unincorporated Areas)	February 24, 1978	None	January 15, 1988	
Luray, Town of	September 15, 1978	None	September 29, 2010	
Scotia, Town of	February 21, 1975	None	July 17, 1986	
Varnville, Town of	May 24, 1974	April 30, 1976	July 3, 1986	

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAMPTON COUNTY, SC AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

9.0 BIBLIOGRAPHY AND REFERENCES

1. U.S. Department of Commerce, Bureau of Census, Population Division, Annual Estimates of the Population for Incorporated Places in South Carolina, Table 4 - Listed Alphabetically: April 1, 2000 to July 1, 2007 (SUB-EST2007-04-45), Release date, July 10, 2008.

2. U.S. Geological Survey, Water Resources Investigations Report 82-1, Techniques for Estimating Magnitude and Frequency of Floods in South Carolina, B.H. Whetstone, 1982.

3. U.S. Geological Survey, 15-Minute Series Topographic Maps, Scale 1:62, 500, Contour Interval 20 feet: Varnville, South Carolina, 1944.

4. U.S. Geological Survey and South Carolina Department of Health and Environmental Control and the Natural Resources Conservation Service, Development of a 14-Digit Hydrologic Unit Code Numbering System for South Carolina, WATER-RESOURCES INVESTIGATIONS REPORT 99-4015, D.E. Bower, C. Lowry, Jr., M.A. Lowery, and N.M. Hurley, Jr., 1999.

5. U.S. Geological Survey, Techniques for Estimating the Magnitude and Frequency of Floods in Rural Basins of South Carolina, 1999, Water-Resources Investigations Report 02-4140., T. Feaster and G. Tasker, 2002.

6. U.S. Geological Survey, Federal Highway Administration, Office of Research and Development, Bridge Waterways Analysis Model/ Research Report, J.O. Shearman, W.H. Kirby, V.R. Schneider, and H.N. Flippo, Washington D.C., 1985.

7. U.S. Geological Survey, Water resources Investigations, Book 7, Chapter C3, Preparation of Input Data for Automatic Computation of Stage-Discharge Relations of Culverts, H.F. Mathai, H.E. Stull, and J. Davidian, undated.

8. U.S. Geological Survey, Open-File Report, Computer Program E431, Users Manual, Computer Applications for Step-Backwater and Floodway Analysis, J.O. Shearman, Washington D.C., 1976.

9. Watershed Concepts, Watershed Information System Version 3.1.0.2. 1999-2007

10. United States Geological Survey, "Seamless Data Distribution System," 1 Arc Second National Elevation Dataset, http://seamless.usgs.gov/, 08/16/08

11. South Carolina Department of Natural Resources (SCDNR), "SCDNR GIS Data Clearinghouse," Hypsography data, https://www.dnr.sc.gov/pls/gisdata/, 08/18/08.

ELEVATION IN FEET (NAVD)

55 60 65 70 75 80 85 90 95 100

3,000 4,000 5,000 6,000 7,000 8,000 9,000 10,000 11,000 12,000 13,000 14,000 15,000 16,000

DAM

POCOTALIGO ROAD

A B C D E F

LEGEND

1% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH COOSAWATCHIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAMPTON COUNTY, SC

AND INCORPORATED AREAS

FLOOD PROFILES

COOSAWATCHIE RIVER TRIBUTARY

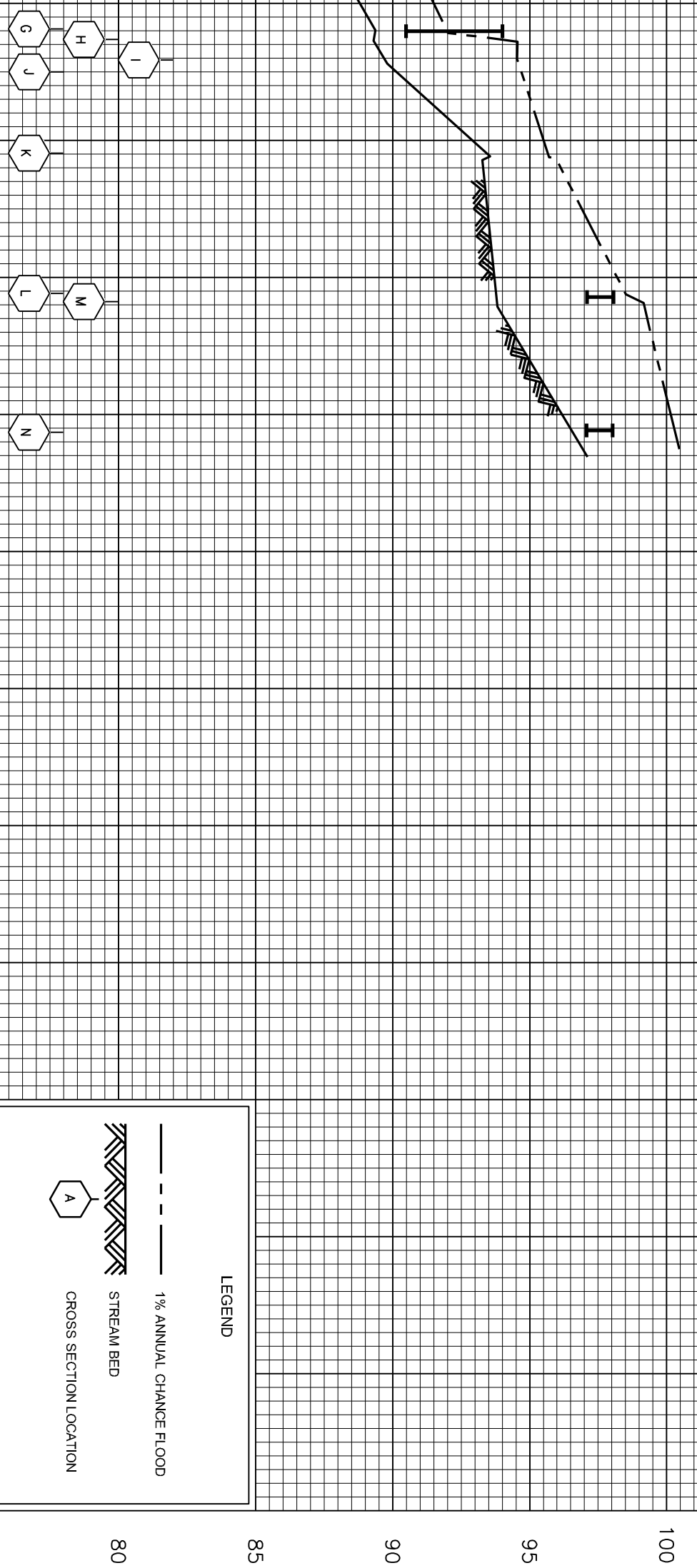
01P

ELEVATION IN FEET (NAVD)

75 80 85 90 95 100 105 110 115 120

10,000 11,000 12,000 13,000 14,000 15,000 16,000 17,000 18,000 19,000 20,000 21,000 22,000 23,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH COOSAWATCHIE RIVER



FEDERAL EMERGENCY MANAGEMENT AGENCY

HAMPTON COUNTY, SC
AND INCORPORATED AREAS

FLOOD PROFILES

COOSAWATCHIE RIVER TRIBUTARY

02P

ELEVATION IN FEET (NAVD)

40 45 50 55 60 65 70 75 80 85

0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000 10,000 11,000 12,000 13,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SANDERS BRANCH

CONFLUENCE WITH SANDERS BRANCH

A

B

C

D

E

ACCESS ROAD

LIMIT OF DETAILED STUDY

LEGEND

1% ANNUAL CHANCE FLOOD

STREAM BED

A CROSS SECTION LOCATION

40 45 50 55 60 65 70 75 80 85

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAMPTON COUNTY, SC

AND INCORPORATED AREAS

FLOOD PROFILES

HOUSE FORK

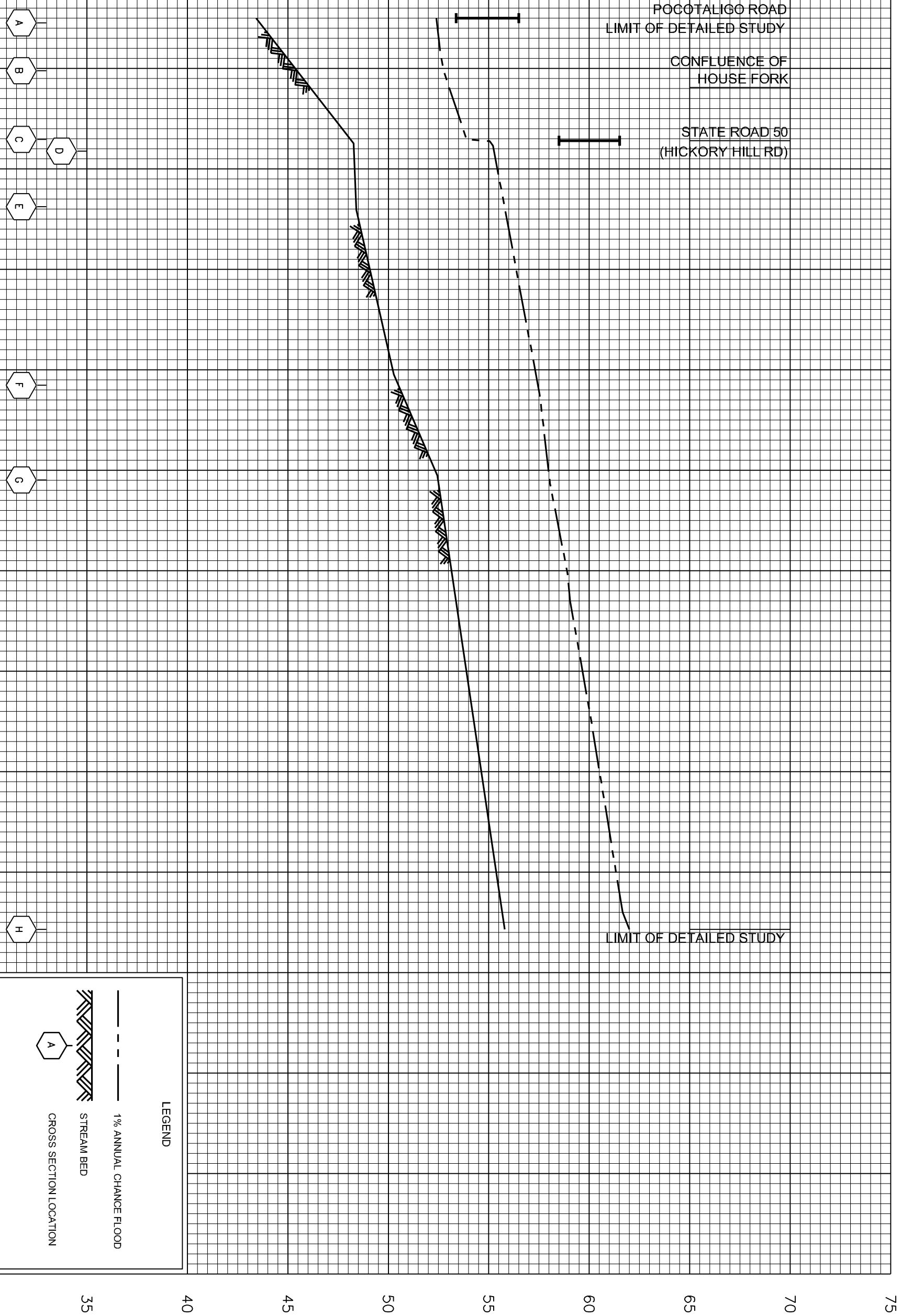
03P

ELEVATION IN FEET (NAVD)

30 35 40 45 50 55 60 65 70 75

5,000 6,000 7,000 8,000 9,000 10,000 11,000 12,000 13,000 14,000 15,000 16,000 17,000 18,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH COOSAWATCHIE RIVER



FEDERAL EMERGENCY MANAGEMENT AGENCY

HAMPTON COUNTY, SC
AND INCORPORATED AREAS

FLOOD PROFILES

SANDERS BRANCH

04P